

SEQUENCE LISTING

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<120> COMPOSITIONS AND METHODS FOR WT1
 SPECIFIC IMMUNOTHERAPY

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<141> 2002-07-12

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 Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu
 1 5 10 15
 Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu
 20 25 30

<210> 314
 <211> 32
 <212> PRT
 <213> Homo sapien

<400> 314
 Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg
 1 5 10 15
 Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser
 20 25 30

<210> 315
 <211> 4
 <212> PRT
 <213> Homo sapien

<400> 315
 Arg Tyr Phe Lys
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<210> 316

<211> 14
 <212> PRT
 <213> Homo sapien

<400> 316
 Glu Arg Arg Phe Ser Arg Ser Asp Gln Leu Lys Arg His Gln
 1 5 10

<210> 317
 <211> 22
 <212> PRT
 <213> Homo sapien

<400> 317
 Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr
 1 5 10 15
 His Thr Gly Lys Thr Ser
 20

<210> 318
 <211> 21
 <212> PRT
 <213> Homo sapien

<400> 318
 Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn
 1 5 10 15
 Met His Gln Arg Asn
 20

<210> 319
 <211> 449
 <212> PRT
 <213> Homo sapien

<400> 319
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1 5 10 15
 Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
 35 40 45
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
 50 55 60
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
 65 70 75 80
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
 85 90 95
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
 100 105 110
 Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
 115 120 125
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
 130 135 140

Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
 145 150 155 160
 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
 165 170 175
 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
 180 185 190
 Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
 195 200 205
 Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
 210 215 220
 Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
 225 230 235 240
 Met Asn Leu Gly Ala Thr Leu Lys Gly Val Ala Ala Gly Ser Ser Ser
 245 250 255
 Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Ser Thr Gly Tyr Glu
 260 265 270
 Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile
 275 280 285
 His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro
 290 295 300
 Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys
 305 310 315 320
 Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys
 325 330 335
 Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
 340 345 350
 Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
 355 360 365
 Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
 370 375 380
 Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
 385 390 395 400
 His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
 405 410 415
 Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
 420 425 430
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
 435 440 445
 Leu

<210> 320

<211> 449

<212> PRT

<213> Mus musculus

<400> 320

Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Ser
 1 5 10 15
 Ser Leu Gly Gly Gly Gly Gly Cys Gly Leu Pro Val Ser Gly Ala Ala
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
 35 40 45
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro

[illegible]

$\langle 210 \rangle$ 321

<211> 9

<212> PRT

<213> Homo sapien and Mus musculus

<400> 321

Pro Ser Gln Ala Ser Ser Gly Gln Ala
1 5

<210> 322

<211> 9

<212> PRT

<213> Homo sapien and Mus musculus

<400> 322

Ser Ser Gly Gln Ala Arg Met Phe Pro
1 5

<210> 323

<211> 9

<212> PRT

<213> Homo sapien and Mus musculus

<400> 323

Gln Ala Arg Met Phe Pro Asn Ala Pro
1 5

<210> 324

<211> 9

<212> PRT

<213> Homo sapien and Mus musculus

<400> 324

Met Phe Pro Asn Ala Pro Tyr Leu Pro
1 5

<210> 325

<211> 9

<212> PRT

<213> Homo sapien and Mus musculus

<400> 325

Pro Asn Ala Pro Tyr Leu Pro Ser Cys
1 5

<210> 326

<211> 9

<212> PRT

<213> Homo sapien and Mus musculus

<400> 326

Ala Pro Tyr Leu Pro Ser Cys Leu Glu
1 5

<210> 327

<211> 1029
 <212> DNA
 <213> Homo sapiens

<400> 327

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atgcagcatc accaccatca ccacatgagc gataaaatta ttcacctgac tgacgacagt 60
tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
tgcggtccgt gcaaaatgat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
aaactgaccg ttgcaaaact gaacatcgat caaaaccctg gcaactgcgc gaaatatggc 240
atccgtggta tcccgaactct gctgctgttc aaaaacgggtg aagtggcggc aaccaaagt 300
ggtgcactgt ctaaagggtca gttgaaagag ttctcgcacg ctaacctggc cggttctggt 360
tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggctc tgctagctct 420
ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480
agtaggcaca tcacagggtc cgagagcgat aaccacacaa cgccatcct ctgcggagcc 540
caatacagaa tacacacgca cgggtgtctt agaggcattc aggatgtgcg acgtgtgcct 600
ggagtagccc cgactcttgt acggtcggca tctgagacca gtgagaaacg ccccttcatt 660
tgtgcttacc caggctgcaa taagagatat tttaagctgt ccacttaca gatgcacag 720
aggaagcaca ctggtgagaa accataccag tgtgacttca aggactgtga acgaaggttt 780
tttcgttcag accagctcaa aagacaccaa aggagacata cagggtgtga accattccag 840
tgtaaaactt gtcagcgaaa gttctcccg tccgaccacc tgaagacca caccaggact 900
catagaggtg aaaagccctt cagctgtcgg tggccaagtt gtcagaaaaa gtttgcccgg 960
tcagatgaat tagtccgcca tcacaacatg catcagagaa acatgaccaa actccagctg 1020
gcgctttga                                     1029

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<210> 328
 <211> 1233
 <212> DNA
 <213> Homo sapiens

<400> 328

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atgcagcatc accaccatca ccacatgagc gataaaatta ttcacctgac tgacgacagt 60
tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
tgcggtccgt gcaaaatgat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
aaactgaccg ttgcaaaact gaacatcgat caaaaccctg gcaactgcgc gaaatatggc 240
atccgtggta tcccgaactct gctgctgttc aaaaacgggtg aagtggcggc aaccaaagt 300
ggtgcactgt ctaaagggtca gttgaaagag ttctcgcacg ctaacctggc cggttctggt 360
tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggctc tgctagctct 420
ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480
agtaggggct ccgacgttcg tgacctgaac gcaactgtgc cggcagttcc gtccctgggt 540
ggtggtggtg gttgcgcact gccggttagc ggtgcagcac agtgggctcc ggttctggac 600
ttcgaccgcg cgggtgcac cgcatacggg tccctgggtg gtccggcacc gccgcccga 660
ccgccgcgcg cgccgcgcgc gccgcgcac tccctcatca aacaggaacc gagctggggg 720
ggtgcagaac cgcacgaaga acagtgcctg agcgcattca ccgttcaact ctccggccag 780
ttcactggca cagccggagc ctgtcgtctac gggcccttcg gtccctctcc gccagccag 840
gcgtcatccg gccagggcag gatgtttcct aacgcgcctt acctgccag ctgcctcgag 900
agccagcccg ctattcgcaa tcagggttac agcacgggtc ccttcgacgg gacgcccagc 960
tacggtcaca cgccctcgca ccatgcggcg cagttcccca accactcatt caagcatgag 1020
gatcccatgg gccagcaggg ctgcgtgggt gagcagcagt actcgggtgc gcccccggtc 1080
tatggctgcc acacccccac cgacagctgc accggcagcc aggttttgc gctgaggacg 1140
ccctacagca gtgacaattt ataccaaatg acatcccagc ttgaatgcat gacctggaat 1200
cagatgaact taggagccac cttaaagggc tga                                     1233

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<210> 329
 <211> 1776

<212> DNA

<213> Homo sapiens

<400> 329

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atgcagcatc accaccatca ccacatgagc gataaaatta ttcacctgac tgacgacagt 60
tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
tgcggtccgt gcaaaatgat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
aaactgaccg ttgcaaaact gaacatcgat caaaaccctg gcaactgcgc gaaatatggc 240
atccgtggta tcccgaactc gctgctgttc aaaaacgggtg aagtggcggc aaccaaagtg 300
ggtgcactgt ctaaagggtca gttgaaagag ttccctcgacg ctaacctggc cggttctggt 360
tctggccata tgacgcatca ccaccatcac cacgtgtcta tcgaaggtcg tgctagctct 420
ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480
agtaggatgg gctccgacgt tcgtgacctg aacgcactgc tgccggcagt tccgtccctg 540
ggtggtgggt gtggttgcg cactgcccgtt agcgggtgcag cacagtgggc tccggttctg 600
gacttcgcac cgccgggtgc atccgcatac ggttccctgg gtggtccggc accgccgcgc 660
gcaccgccgc cgccgccgc gccgccgcc cactccttca tcaaacagga accgagctgg 720
ggtggtgcag aaccgcacga agaacagtgc ctgagcgcat tcaccgttca cttctccggc 780
cagttcactg gcacagccgg agcctgtcgc tacgggccct tcggtcctcc tccgccagc 840
caggcgatcat ccggccaggc caggatgttt cctaaccgc cctacctgcc cagctgcctc 900
gagagccagc ccgtatttcg caatcagggg tacagcacgg tcaccttcga cgggacgccc 960
agctacggtc acacgcctc gcaccatgcg gcgcagttcc ccaaccactc attcaagcat 1020
gaggatccca tgggccagca gggctcgctg ggtgagcagc agtactcggg gccgcccccg 1080
gtctatggct gccacacccc caccgacagc tgaccgggca gccaggcttt gctgctgagg 1140
acgccctaca gcagtgaaca tttataccaa atgacatccc agcttgaatg catgacctgg 1200
aatcagatga acttaggagc caccttaaa ggcacacga cagggtacga gagcgataac 1260
cacacaacgc ccactcctc cggagcccaa tacagaatac acacgcacgg tgtcttcaga 1320
ggcattcagg atgtgcgacg tgtgcctgga gtgacccga ctcttgtagc gtcggcatct 1380
gagaccagtg agaaacgccc ctcatgtgt gcttaccag gctgcaataa gagatatttt 1440
aagctgtccc acttacagat gcacagcagg aagcacactg gtgagaaacc ataccagtg 1500
gacttcaagg actgtgaacg aaggtttttt cgttcagacc agctcaaaag acaccaagg 1560
agacatacag gtgtgaaacc attccagtgt aaaacttgtc agcgaaagt ctcccggtc 1620
gaccacctga agaccacac caggactcat acaggtgaaa agcccttcag ctgtcggtg 1680
ccaagttgtc agaaaaagtt tgcccgttca gatgaattag tccgccatca caacatgat 1740
cagagaaaca tgaccaaact ccagctggcg ctttga 1776

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<210> 330

<211> 771

<212> DNA

<213> Homo sapiens

<400> 330

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atgcagcatc accaccatca ccacggctcc gacgttcgtg acctgaacgc actgctgcgc 60
gcagttccgt ccctgggtgg tgggtgggtg tgcgactgc cggttagcgg tgcagcacag 120
tgggtccctg ttctggactt cgcaccgcgc ggtgcacccg catacggttc cctgggtggg 180
ccggcaccgc cgccggcacc gccgcgcgc cgccgcactc cttcatcaaa 240
caggaaccga gctgggtggg tgcagaaccg cacgaagaac agtgccctgag cgcattcacc 300
gttactttct ccggccagtt cactggcaca gccggagcct gtcgctacgg gcccttcggg 360
cctcctccgc ccagccaggc gtcacccggc caggccagga tgtttcctaa cgcgccctac 420
ctgccagct gcctcgagag ccagcccgtt attcgcaatc agggttacag cacggtcacc 480
ttcgacggga cgcccagcta cggtcacacg ccctcgacc atgcggcgca gttccccaac 540
cactcattca agcatgagga tcccatgggc cagcagggtc cgctgggtga gcagcagtac 600
tcggtgccgc ccccggtcta tggctgccac acccccaccg acagctgcac cggcagccag 660
gctttgctgc tgaggacgcc ctacagcagt gacaatttat accaaatgac atcccagctt 720
gaatgcatga cctggaatca gatgaactta ggagccacct taaagggtg a 771

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<210> 331
 <211> 567
 <212> DNA
 <213> Homo sapiens

<400> 331
 atgcagcatc accaccatca ccaccacagc acagggtagc agagcgataa ccacacaacg 60
 cccatcctct gcggagccca atacagaata cacacgcacg gtgtcttcag aggcattcag 120
 gatgtgcgac gtgtgcctgg agtagccccg actcttgtac ggtcggcatc tgagaccagt 180
 gagaaaacgcc ccttcatgtg tgcttaccca ggctgcaata agagatattt taagctgtcc 240
 cacttacaga tgcacagcag gaagcacact ggtgagaaaac cataccagtg tgacttcaag 300
 gactgtgaac gaagggtttt tcgttcagac cagctcaaaa gacaccaaag gagacataca 360
 ggtgtgaaac cattccagtg taaaacttgt cagcgaaagt tctccgggtc cgaccacctg 420
 aagaccacaca ccaggactca tacaggtgaa aagcccttca gctgtcgggtg gccaaagtgt 480
 cagaaaaaagt ttgcccggtc agatgaatta gtccgccatc acaacatgca tcagagaaac 540
 atgaccaaac tccagctggc gctttga 567

<210> 332
 <211> 342
 <212> PRT
 <213> Homo sapiens

<400> 332
 Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu
 5 10 15
 Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
 20 25 30
 Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
 35 40 45
 Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
 50 55 60
 Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
 65 70 75 80
 Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
 85 90 95
 Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
 100 105 110
 Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
 115 120 125
 His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
 130 135 140
 Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Lys Ser
 145 150 155 160
 Ser Arg His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile
 165 170 175
 Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe Arg Gly
 180 185 190
 Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg
 195 200 205
 Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro

210		215		220
Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met His Ser				
225		230		235
Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys				240
	245		250	255
Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg				
	260		265	270
His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe				
	275		280	285
Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu				
	290		295	300
Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg				
305		310		315
Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn Met Thr				320
	325		330	335
Lys Leu Gln Leu Ala Leu				
	340			

<210> 333
 <211> 410
 <212> PRT
 <213> Homo sapiens

<400> 333
 Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu
 5 10 15
 Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
 20 25 30
 Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
 35 40 45
 Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
 50 55 60
 Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
 65 70 75 80
 Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
 85 90 95
 Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
 100 105 110
 Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
 115 120 125
 His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
 130 135 140
 Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Lys Ser
 145 150 155 160
 Ser Arg Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val
 165 170 175
 Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala
 180 185 190
 Ala Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala
 195 200 205
 Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
 210 215 220

```

Pro Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly
225          230          235          240
Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His
          245          250          255
Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro
          260          265          270
Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met
          275          280          285
Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala
          290          295          300
Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser
305          310          315          320
Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser
          325          330          335
Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln
          340          345          350
Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp
          355          360          365
Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser
          370          375          380
Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn
385          390          395          400
Gln Met Asn Leu Gly Ala Thr Leu Lys Gly
          405          410

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<210> 334

<211> 591

<212> PRT

<213> Homo sapiens

<400> 334

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Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu
          5          10          15
Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
          20          25          30
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
          35          40          45
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
          50          55          60
Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
          65          70          75          80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
          85          90          95
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
          100          105          110
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
          115          120          125
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
          130          135          140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser
145          150          155          160
Ser Arg Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala
          165          170          175

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Val	Pro	Ser	Leu	Gly	Gly	Gly	Gly	Gly	Cys	Ala	Leu	Pro	Val	Ser	Gly
			180					185					190		
Ala	Ala	Gln	Trp	Ala	Pro	Val	Leu	Asp	Phe	Ala	Pro	Pro	Gly	Ala	Ser
		195					200					205			
Ala	Tyr	Gly	Ser	Leu	Gly	Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	Pro	Pro
	210					215					220				
Pro	Pro	Pro	Pro	Pro	Pro	His	Ser	Phe	Ile	Lys	Gln	Glu	Pro	Ser	Trp
225					230					235					240
Gly	Gly	Ala	Glu	Pro	His	Glu	Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val
				245					250					255	
His	Phe	Ser	Gly	Gln	Phe	Thr	Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly
			260					265					270		
Pro	Phe	Gly	Pro	Pro	Pro	Pro	Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg
		275					280					285			
Met	Phe	Pro	Asn	Ala	Pro	Tyr	Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro
	290					295					300				
Ala	Ile	Arg	Asn	Gln	Gly	Tyr	Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro
305					310					315					320
Ser	Tyr	Gly	His	Thr	Pro	Ser	His	His	Ala	Ala	Gln	Phe	Pro	Asn	His
				325					330					335	
Ser	Phe	Lys	His	Glu	Asp	Pro	Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu
				340				345					350		
Gln	Gln	Tyr	Ser	Val	Pro	Pro	Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr
		355					360					365			
Asp	Ser	Cys	Thr	Gly	Ser	Gln	Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser
	370					375					380				
Ser	Asp	Asn	Leu	Tyr	Gln	Met	Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp
385					390					395					400
Asn	Gln	Met	Asn	Leu	Gly	Ala	Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr
			405					410						415	
Glu	Ser	Asp	Asn	His	Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg
			420					425					430		
Ile	His	Thr	His	Gly	Val	Phe	Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val
		435					440					445			
Pro	Gly	Val	Ala	Pro	Thr	Leu	Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu
	450					455					460				
Lys	Arg	Pro	Phe	Met	Cys	Ala	Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe
465					470					475					480
Lys	Leu	Ser	His	Leu	Gln	Met	His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys
				485					490					495	
Pro	Tyr	Gln	Cys	Asp	Phe	Lys	Asp	Cys	Glu	Arg	Arg	Phe	Phe	Arg	Ser
			500					505					510		
Asp	Gln	Leu	Lys	Arg	His	Gln	Arg	Arg	His	Thr	Gly	Val	Lys	Pro	Phe
		515					520					525			
Gln	Cys	Lys	Thr	Cys	Gln	Arg	Lys	Phe	Ser	Arg	Ser	Asp	His	Leu	Lys
	530					535					540				
Thr	His	Thr	Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Phe	Ser	Cys	Arg	Trp
545					550					555					560
Pro	Ser	Cys	Gln	Lys	Lys	Phe	Ala	Arg	Ser	Asp	Glu	Leu	Val	Arg	His
				565				570						575	
His	Asn	Met	His	Gln	Arg	Asn	Met	Thr	Lys	Leu	Gln	Leu	Ala	Leu	
			580					585					590		

<210> 335
 <211> 256
 <212> PRT
 <213> Homo sapiens

<400> 335
 Met Gln His His His His His His Gly Ser Asp Val Arg Asp Leu Asn
 5 10 15
 Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala
 20 25 30
 Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala
 35 40 45
 Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro
 50 55 60
 Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys
 65 70 75 80
 Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu
 85 90 95
 Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly
 100 105 110
 Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser
 115 120 125
 Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys
 130 135 140
 Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr
 145 150 155 160
 Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala
 165 170 175
 Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln
 180 185 190
 Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly
 195 200 205
 Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu
 210 215 220
 Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu
 225 230 235 240
 Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly
 245 250 255

<210> 336
 <211> 188
 <212> PRT
 <213> Homo sapiens

<400> 336
 Met Gln His His His His His His His Ser Thr Gly Tyr Glu Ser Asp
 5 10 15
 Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr
 20 25 30
 His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val
 35 40 45
 Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro

50		55		60
Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser				
65		70		80
His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln				
	85		90	95
Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu				
	100		105	110
Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys				
	115		120	125
Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr				
	130		135	140
Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys				
145		150		160
Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met				
	165		170	175
His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu				
	180		185	

<210> 337
 <211> 324
 <212> DNA
 <213> Homo sapiens

<400> 337
 atgcagcatc accaccatca ccacggttcc gacgtgcggg acctgaacgc actgctgccg 60
 gcagttccat ccctgggtgg cgggtggaggc tgcgcactgc cggttagcgg tgcagcacag 120
 tgggctccag ttctggactt cgcaccgcct ggtgcatccg catacggttc cctgggtggg 180
 ccagcacctc cgcccgcacg gccccaccg cctccaccgc ccccgccactc cttcatcaaa 240
 caggaaccta gctgggtggg tgcagaaccg cacgaagaac agtgccctgag cgcattctga 300
 gaattctgca gatattccatc acac 324

<210> 338
 <211> 462
 <212> DNA
 <213> Homo sapiens

<400> 338
 atgcagcatc accaccatca ccaccacgaa gaacagtgcc tgagcgcatt caccgttcac 60
 ttctccggcc agttcactgg cacagccgga gcctgtcgct acgggccctt cggtcctcct 120
 ccgcccagcc aggcgtcatc cggccaggcc aggatgtttc ctaacgcgcc ctacctgccc 180
 agctgcctcg agagccagcc cgctattcgc aatcaggggt acagcacggt caccttcgac 240
 gggacgcccc gctacggtca cacgccctcg caccatgcgg cgcagttccc caaccactca 300
 ttcaagcatg aggatcccat gggccagcag ggctcgctgg gtgagcagca gtactcggtg 360
 ccgcccccg tctatggctg ccacaccccc accgacagct gcaccggcag ccaggctttg 420
 ctgctgagga cgccctacag cagtgacaat ttatactgat ga 462

<210> 339
 <211> 405
 <212> DNA
 <213> Homo sapiens

<400> 339
 atgcagcatc accaccatca ccaccaggct ttgctgctga ggacgcccta cagcagtgc 60
 aatttatacc aaatgacatc ccagcttgaa tgcattgacct ggaatcagat gaacttagga 120

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gccaccttaa agggccacag cacagggtac gagagcgata accacacaac gcccatcctc 180
tgcggagccc aatacagaat acacacgcac ggtgtcttca gaggcattca ggatgtgcga 240
cgtgtgcctg gagtagcccc gactcttgta cggtcggcat ctgagaccag tgagaaacgc 300
cccttcatgt gtgcttacct aggttgcaat aagagatatt ttaagctgtc ccacttacag 360
atgcacagca ggaagcacac tggtagagaa ccataccagt gatga 405

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<210> 340
<211> 339
<212> DNA
<213> Homo sapiens

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<400> 340
atgcagcatc accaccatca ccaccacagc aggaagcaca ctggtgagaa accataccag 60
tgtgacttca aggactgtga acgaaggttt tttcgttcag accagctcaa aagacaccaa 120
aggagacata caggtgtgaa accattccag tgtaaaactt gtcagcgaaa gttctcccg 180
tccgaccacc tgaagaccca caccaggact catacagggtg aaaagccctt cagctgtcgg 240
tggccaagtt gtcagaaaaa gtttgcccg gtcagatgaat tagtccgcca tcacaacatg 300
catcagagaa acatgaccaa actccagctg gcgctttga 339

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<210> 341
<211> 1110
<212> DNA
<213> Homo sapiens

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<400> 341
atgcagcatc accaccatca ccaccactcc ttcattcaaac aggaaccgag ctggggtggt 60
gcagaaccgc acgaagaaca gtgcctgagc gcattcacgc ttcaattctc cggccagttc 120
actggcacag ccggagcctg tcgctacggg cccttcggtc ctctccgcc cagccaggcg 180
tcatccggcc aggccaggat gtttcctaac gcgccctacc tgcccagctg cctcgagagc 240
cagcccgtca ttgcgaatca gggttacagc acggtcacct tcgacgggac gccagctac 300
ggtcacacgc cctgcacca tgcggcgcag ttcccccaacc actcattcaa gcatgaggat 360
cccatgggcc agcagggctc gctgggtgag cagcagtagt cggtgccgcc cccggtctat 420
ggctgccaca cccccaccga cagctgcacc ggcagccagg ctttgctgct gaggacgccc 480
tacagcagtg acaatttata ccaaatgaca tcccagcttg aatgcatgac ctggaatcag 540
atgaacttag gagccacctt aaagggccac agcacagggt acgagagcga taaccacaca 600
acgcccattc tctgcggagc ccaatacaga atacacacgc acggtgtctt cagaggcatt 660
caggatgtgc gacgtgtgcc tggagtagcc ccgactcttg tacggtcggc atctgagacc 720
agtgagaaac gcccttcat gtgtgcttac ccaggctgca ataagagata ttttaagctg 780
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aaggactgtg aacgaagggt ttttcgttca gaccagctca aaagacacca aaggagacat 900
acagggtgta aaccattcca gtgtaaaact tgtcagcgaa agttctcccg gtccgaccac 960
ctgaagaccc acaccaggac tcatacaggt gaaaagccct tcagctgtcg gtggccaagt 1020
tgtcagaaaa agtttgcccg gtcagatgaa ttagtccgcc atcacaacat gcatcagaga 1080
aacatgacca aactccagct ggcgctttga 1110

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<210> 342
<211> 99
<212> PRT
<213> Homo sapiens

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<400> 342

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Met Gln His His His His His His Gly Ser Asp Val Arg Asp Leu Asn
 5 10 15
 Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala
 20 25 30
 Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala
 35 40 45
 Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro
 50 55 60
 Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys
 65 70 75 80
 Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu
 85 90 95
 Ser Ala Phe

<210> 343
 <211> 152
 <212> PRT
 <213> Homo sapiens

<400> 343
 Met Gln His His His His His His His Glu Glu Gln Cys Leu Ser Ala
 5 10 15
 Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys
 20 25 30
 Arg Tyr Gly Pro Phe Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly
 35 40 45
 Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu
 50 55 60
 Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp
 65 70 75 80
 Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe
 85 90 95
 Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser
 100 105 110
 Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His
 115 120 125
 Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr
 130 135 140
 Pro Tyr Ser Ser Asp Asn Leu Tyr
 145 150

<210> 344
 <211> 133
 <212> PRT
 <213> Homo sapiens

<400> 344
 Met Gln His His His His His His Gln Ala Leu Leu Leu Arg Thr Pro
 5 10 15
 Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met
 20 25 30
 Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr

```

          35          40          45
Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln
   50          55          60
Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg
   65          70          75          80
Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr
          85          90          95
Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg
          100          105          110
Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly
          115          120          125
Glu Lys Pro Tyr Gln
          130

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<210> 345
 <211> 112
 <212> PRT
 <213> Homo sapiens

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<400> 345
Met Gln His His His His His His His Ser Arg Lys His Thr Gly Glu
          5          10          15
Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg
          20          25          30
Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro
          35          40          45
Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
          50          55          60
Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg
          65          70          75          80
Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg
          85          90          95
His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
          100          105          110

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<210> 346
 <211> 369
 <212> PRT
 <213> Homo sapiens

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<400> 346
Met Gln His His His His His His His Ser Phe Ile Lys Gln Glu Pro
          5          10          15
Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe
          20          25          30
Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg
          35          40          45
Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln
          50          55          60
Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser
          65          70          75          80
Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly

```

				85					90					95			
Thr	Pro	Ser	Tyr	Gly	His	Thr	Pro	Ser	His	His	Ala	Ala	Gln	Phe	Pro		
			100					105					110				
Asn	His	Ser	Phe	Lys	His	Glu	Asp	Pro	Met	Gly	Gln	Gln	Gly	Ser	Leu		
		115					120					125					
Gly	Glu	Gln	Gln	Tyr	Ser	Val	Pro	Pro	Pro	Val	Tyr	Gly	Cys	His	Thr		
	130					135					140						
Pro	Thr	Asp	Ser	Cys	Thr	Gly	Ser	Gln	Ala	Leu	Leu	Leu	Arg	Thr	Pro		
145					150					155					160		
Tyr	Ser	Ser	Asp	Asn	Leu	Tyr	Gln	Met	Thr	Ser	Gln	Leu	Glu	Cys	Met		
			165					170						175			
Thr	Trp	Asn	Gln	Met	Asn	Leu	Gly	Ala	Thr	Leu	Lys	Gly	His	Ser	Thr		
		180					185						190				
Gly	Tyr	Glu	Ser	Asp	Asn	His	Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln		
	195					200					205						
Tyr	Arg	Ile	His	Thr	His	Gly	Val	Phe	Arg	Gly	Ile	Gln	Asp	Val	Arg		
	210					215				220							
Arg	Val	Pro	Gly	Val	Ala	Pro	Thr	Leu	Val	Arg	Ser	Ala	Ser	Glu	Thr		
225					230				235					240			
Ser	Glu	Lys	Arg	Pro	Phe	Met	Cys	Ala	Tyr	Pro	Gly	Cys	Asn	Lys	Arg		
			245					250					255				
Tyr	Phe	Lys	Leu	Ser	His	Leu	Gln	Met	His	Ser	Arg	Lys	His	Thr	Gly		
		260					265					270					
Glu	Lys	Pro	Tyr	Gln	Cys	Asp	Phe	Lys	Asp	Cys	Glu	Arg	Arg	Phe	Phe		
	275					280					285						
Arg	Ser	Asp	Gln	Leu	Lys	Arg	His	Gln	Arg	Arg	His	Thr	Gly	Val	Lys		
	290					295					300						
Pro	Phe	Gln	Cys	Lys	Thr	Cys	Gln	Arg	Lys	Phe	Ser	Arg	Ser	Asp	His		
305					310					315				320			
Leu	Lys	Thr	His	Thr	Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Phe	Ser	Cys		
		325							330					335			
Arg	Trp	Pro	Ser	Cys	Gln	Lys	Lys	Phe	Ala	Arg	Ser	Asp	Glu	Leu	Val		
		340					345						350				
Arg	His	His	Asn	Met	His	Gln	Arg	Asn	Met	Thr	Lys	Leu	Gln	Leu	Ala		
		355					360					365					

Leu

<210> 347

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 347

ggctccgacg tgcgggacct g

21

<210> 348

<211> 30

<212> DNA

<213> Artificial Sequence

<220>
 <223> Primer

 <400> 348
 gaattctcaa agcgccagct ggagtttggt 30

 <210> 349
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 349
 ggctccgacg tgcgggacct g 21

 <210> 350
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 350
 gaattctcaa agcgccagct ggagtttggt 30

 <210> 351
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 351
 cacagcacag ggtacgagag c 21

 <210> 352
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 352
 gaattctcaa agcgccagct ggagtttggt 30

 <210> 353
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

 <400> 353
 cacgaagaac agtgcctgag cgattcac 29

 <210> 354
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 354
 ccggcgaatt catcagtata aattgtcact gc 32

 <210> 355
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 355
 caggctttgc tgctgaggac gccc 24

 <210> 356
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 356
 cacggagaat tcatcactgg tatggtttct cacc 34

 <210> 357
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 357
 cacagcagga agcacactgg tgagaaac 28

 <210> 358
 <211> 30
 <212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 358

ggatatctgc agaattctca aagcgccagc

30

<210> 359

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 359

cactccttca tcaaacagga ac

22

<210> 360

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 360

ggatatctgc agaattctca aagcgccagc

30

<210> 361

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 361

ggttcgcgacg tgcgggacct gaacgcactg ctg

33

<210> 362

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 362

ctgccggcag cagtgcgttc aggtcccgca cgtcggaacc

40

<210> 363

<211> 35

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 363
 ccggcagttc catccctggg tggcgggtgga ggctg 35

 <210> 364
 <211> 38
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 364
 cggcagtgcg cagcctccac cgccacccag ggatggaa 38

 <210> 365
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 365
 cgcactgccg gttagcgggtg cagcacagtg ggctc 35

 <210> 366
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 366
 cagaactgga gccactgtg ctgcaccgct aac 33

 <210> 367
 <211> 38
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 367
 cagttctgga cttcgaccg cctggtgcat ccgcatac 38

 <210> 368

<211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 368
 cagggaaccg tatgcggatg caccaggcgg tqcgaagtc 39

<210> 369
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 369
 ggttccctgg gtggtccagc acctccgccc gcaacgcc 38

<210> 370
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 370
 ggcggtgggg gcgttgctgg cgaggtgct ggaccacc 38

<210> 371
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 371
 cccaccgcct ccaccgccc cgcactcctt catcaaacag 40

<210> 372
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 372
 ctaggttcct gtttgatgaa ggagtgcggg ggcggtgga 39

<210> 373
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 373
 gaacctagct ggggtggtgc agaaccgcac gaagaaca 38

<210> 374
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 374
 ctcaggcact gttcttcgtg cggttctgca ccacccag 39

<210> 375
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 375
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<210> 376
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 376
 gtgtgatgga tatctgcaga attctcagaa tgcg 34

<210> 377
 <211> 1292
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> 253,256,517,518,520,521,522,743,753,754,
 758

<223> n = A,T,C or G

<400> 377

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atgggctccg acgttcgtga cctgagcgcg ctgctgccgg cagttccgtc cctgggtgat 60
ggtggtggtt gcgcactgcc ggtagcggt gcagcacagt gggctccggt tctggacttc 120
gcaccgccgg gtgcatccgc acacgggtccc ctgggtgggc cggcgccgcc gtcggcaccg 180
ccgccgccgc cggcgccgcc gccgcactcc ttcataaaac agggaccgag ctgggggtggc 240
gcggaactgc ackaakaaca gtacctgagc gcgttcaccg ttcactcctc cggtcaggtt 300
cactggcagc gccggggcct gtcgctacgg gcccctcggc cccctccgc ccagccaggc 360
gtcatccggc caggccagga tgtctcctag cgcgccctgc ctgccagcc gcctcgagag 420
ccagcccgtc acccgcaatc ggggctacag cacggtcacc ttcgacgggg cgtccggcta 480
cggtcacacg cctcgcacc atgcggcgca gttctcsmar yyactcgta ggcgtgagga 540
tcccatgggc cagcagggtc cgtggtgga gcagcagtg cggcgccgc ccccgccgtg 600
tgccgcacc accccgcgc acagctgcgc cggcagccag gctttgctgc tgagggcgcc 660
ctgtagcagc gcggtttat accaagtgac gtcccagctt gagtgcattg cctggagtca 720
gatgagcctc gggcgccct tamcgggcca cakyacargg tacgagagcg atgatcacac 780
aacgcccggc ctctgcggag cccaatacag aatacacacg cacgtgcct tccggggcgt 840
tcagggtgtg cgcctgtgc ctggagtgc cccgactctt gtacggtcgg catctgaggc 900
cagtgaggaa cggccctca tgtgtgctta cccaggctgc aataggaggt atctgaagct 960
gccccgctta cagatgcacg gtaggaagca cgtggtgag agaccatacc agtgtgactt 1020
caaggactgt ggacggaggt tttctgctc agaccggctc aaaagacacc aggggaggca 1080
tacagatgtg aagccattcc agcgtgaagac ctgtcagcga gggttctccc ggcccaacca 1140
cctgaagacc cagccagga ctcatgcagg tgaaaagccc cccagctgtc ggtggtcaga 1200
ttgtcagaga aagcctgcc ggtcaagtga gttggtccgc catcgcgaca tgcacagag 1260
gggcatgacc gaactccagc tggcgctttg aa 1292

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<210> 378

<211> 1291

<212> DNA

<213> Homo sapiens

<400> 378

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atgggctccg acgttcgtga cctaaacgca ctgctgccgg cagttccgtc cccgggtggt 60
ggtggtggtt gcgcactgcc ggtagcggt gcaacacagt gggctccggt tctggacttc 120
gtaccgccgg gtgcgcctgt atgcggttcc ctgggtggcc cggcaccgcc gccagcgccg 180
ccgccgctgc cggcgccgcc gtcgcactcc ttcaccaaac aggaaccgag ttgggtggtt 240
acagagccgc acgcaggaca gggccggagc gactcgtcg ctcactcctc cggccagttc 300
actggcacag ccggagcctg tcgctacggg cccttcggtc ctctccgcc cagccaggcg 360
tcacccggcc aggccaggat gtttcctaac gcgccctacc tgcccagctg cctcgagagc 420
cagcccgtta ttcgcaatca gggttacagc acggtcacct tcgacgggac gccagctac 480
ggtcacacgc cctcgacca tgccggcgag tcccccaacc actcatccaa gcatgaggac 540
cccatgggcc agcagggtc gccgggtgag cagcagtact cggcgccgcc cccggtctgc 600
ggctgccgca cccccaccgg cagctgcacc ggcagccagg ctttctgctg gaggcgcccc 660
tacagcgggt gcgatctaca ccaaacgaca tcccagcttg gacacatggc ctggaatcag 720
acgaacttag gagccacctt aaagggccac ggcacagggt acgagagcga tgaccacaca 780
acgcccatcc tctgcggaac ccagtacagg atacgcgcgc gcggcgctct cgggggtact 840
caggatgtgc ggtgtgtgcc tgggggtggc ccgactcttg tcgggtcggc atctgagacc 900
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<210> 379
 <211> 1281
 <212> DNA
 <213> Homo sapiens

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 <211> 3020
 <212> DNA
 <213> Homo sapiens

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<210> 381
<211> 1291
<212> DNA
<213> Homo sapiens

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<400> 381
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tgtcagaaaa agtttgcccg gtcagatgaa ttagtccgcc atcacaacat gcatcagaga 1260
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<210> 382

<211> 1491

<212> DNA

<213> Homo sapiens

<400> 382

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gcacagtggg ctccggttct ggacttcgca ccgccgggtg catccgcata cggttccctg 240
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caggaaccga gctggggtgg tgcagaaccg cacgaagaac agtgcctgag cgcattcacc 360
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cctcctccgc ccagccagggc gtcatccggc caggccagga tgtttcctaa cgcgccctac 480
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<210> 383

<211> 1251

<212> DNA

<213> Homo sapiens

<400> 383

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<210> 384

<211> 228

<212> DNA

<213> Homo sapiens

<400> 384

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gacaccatcg agaattgtcaa ggcaaagatc caagataagg aaggcattcc tctgatcag 120
cagagggttg tctttgccgg aaaacagctg gaagatggtc gtaccctgtc tgactacaac 180
atccagaaag agtccacctt gcacctggta ctccgtctca gaggtggg 228

```

<210> 385

<211> 1515

<212> DNA

<213> Homo sapiens

<400> 385

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caccatgcgg cgcagttccc caaccactca ttcaagcatg aggatcccat gggccagcag 780
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accgacagct gcaccggcag ccaggctttg ctgctgagga cgccctacag cagtgacaat 900
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```

<210> 386

<211> 648

<212> DNA

<213> Homo sapiens

<400> 386

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aagggccaca gcacagggtg cgagagcgat aaccacacaa cgccatcct ctgcggagcc 600
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<210> 387

<211> 1089

<212> DNA

<213> Homo sapiens

<400> 387

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cgctacgggc ccttcgggtcc tcctccgccc agccaggcgt catccggcca ggccaggatg 180
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catcacagggtg aaaagccctt cagctgtcgg tggccaagtt gtcagaaaaa gtttgcccgg 1020
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gcgctttga 1089

```

```

<210> 388
<211> 1035
<212> DNA
<213> Homo sapiens

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<400> 388
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aggacgcctt acagcagtga caatttatac caaatgacat cccagcttga atgcatgacc 900
tggaatcaga tgaacttagg agccacctta aagggccaca gcacagggtg cgagagcgat 960
aaccacaaa cgcccatcct ctgcggagcc caatacagaa tacacacgca cgggtgtctt 1020
agaggcattc agtga 1035

```

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<210> 389
<211> 1263
<212> DNA
<213> Homo sapiens

```

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<400> 389
atgacggccg cgctccgataa cttccagctg tcccaggggtg ggcagggatt cgccattccg 60
atcgggcagg cgatggcgat cgcgggccag atcaagcttc ccaccgttca tatcgggcct 120
accgccttcc tcggcttggg tgttgctgac aacaacggca acggcgacg agtccaacgc 180
gtggtcggga gcgctccggc ggcaagtctc ggcatctcca ccggcgacgt gatcaccgcg 240
gtcgacggcg ctccgatcaa ctcggccacc gcgatggcgg acgcgcttaa cgggcatcat 300
cccgtgacg tcatctcggt gacctggcaa accaagtccg gcggcacgag tacaggggaa 360
gtgacattgg ccgagggacc cccggccgaa ttcccgctgg tgccgcgagg cagcccgatg 420
ggctccgacg ttcgggaact gaacgcactg ctgccggcag ttccgtccct ggggtggtgt 480
ggtggttgcg cactgccggg tagcgggtgca gcacagtggg ctccggttct ggacttcgca 540
ccgccgggtg catccgcata cggttccctg ggtggtccgg caccgcccgc ggaccgcgg 600
ccgcccccgc cgccgcggcc gcaactcttc atcaaacagg aaccgagctg ggggtgtgca 660
gaaccgcacg aagaacagtg cctgagcgca ttcaccgttc acttctccgg ccagttcact 720
ggcagacggg gagcctgtcg ctacggggcc ctctggtcctc ctccgcccag ccaggcgctc 780
tccggccagg ccaggtatgtt tcctaacggc cctcacctgc ccagctgcct cgagagccag 840
cccgtatctt gcaatcaggg ttacagcacg gtcaccttcg acgggacgcc cagctacggg 900
cacacgccct cgcaccatgc ggcgagttc cccaaccact cattcaagca tgaggatccc 960
atgggccagc agggctcgct gggtagcag cagtactcgg tgccgcccc ggtctatggc 1020
tgccacaccc ccaccgacag ctgcaccggc agccaggctt tgctgctgag gacgccctac 1080
agcagtgaca atttatacca aatgacatcc cagcttgaat gcattgacct gaatcagatg 1140

```

```

aacttaggag ccaccttaaa gggccacagc acagggtagc agagcgataa ccacacaacg 1200
cccatcctct gcggagccca atacagaata cacacgcacg gtgtcttcag aggcattcag 1260
tga 1263

```

```

<210> 390
<211> 1707
<212> DNA
<213> Homo sapiens

```

```

<400> 390
atgacggccg cgtccgataa cttccagctg tcccagggtg ggcagggatt cgccattccg 60
atcgggcagg cgatggcgat cgcgggccag atcaagcttc ccaccgttca tatcgggcct 120
accgccttcc tcggcttggg tgttgtcgac aacaacggca acggcgacag agtccaacgc 180
gtggtcggga gcgctccggc ggcaagtctc ggcatctcca ccggcgacgt gatcaccgcg 240
gtcgacggcg ctccgatcaa ctccggccacc gcgatggcgg acgcgcttaa cgggcatcat 300
cccggtagcg tcattctcggg gacctggcaa accaagtcgg gcggcacgcg tacagggaac 360
gtgacattgg ccgagggacc cccggccgaa ttcccgctgg tgccgcgcgg cagcccgatg 420
ggctccgacg ttccggacct gaacgcactg ctgcggcgag ttccgctcct ggggtggtgg 480
gggtggttgc cactgccggt tagcggtgca gcacagtggg ctccggttct ggacttcgca 540
ccgccgggtg catccgcata cggttccctg ggtggtccgg caccgcgcgc ggcaccgcgc 600
ccgccgcgcg cgcgcgcgcg gcactccttc atcaaacagg aaccgagctg ggggtggtgca 660
gaaccgcacg aagaacagtg cctgagcgca ttcaccgttc acttctccgg ccagttcact 720
ggcacagccg gagcctgtcg ctacgggcc ttcggtcctc ctccgcccag ccaggcgtca 780
tccggccagg ccaggatggt tcctaacgcg ccctacctgc ccagctgcct cgagagccag 840
cccgcatttc gcaatcaggg ttacagcacg gtcaccttcg acgggacgcc cagctacggt 900
cacacgccct cgcaccatgc ggcgagttc cccaaccact cattcaagca tgaggatccc 960
atgggccagc agggctcgct ggtgagcag cagtactcgg tgccgcccc ggtctatggc 1020
tgccacaccc ccaccgacag ctgcaccggc agccaggctt tgctgctgag gacgcctac 1080
agcagtgaca atttatacca aatgacatcc cagcttgaat gcatgacctg gaatcagatg 1140
aacttaggag ccaccttaaa gggccacagc acagggtagc agagcgataa ccacacaacg 1200
cccatcctct gcggagccca atacagaata cacacgcacg gtgtcttcag aggcattcag 1260
gatgtgcgac gtgtgcctgg agtagcccc actcttgtag ggtcggcatc tgagaccagt 1320
gagaaacgcc ccttcattgt tgcttaccga ggctgcaata agagatattt taagctgtcc 1380
cacttacaga tgcacagcag gaagcacact ggtgagaaac cataccagtg tgacttcaag 1440
gactgtgaac gaagggtttt tegtacagac cagctcaaaa gacaccaaag gagacataca 1500
gggtgtgaaac cattccagtg taaaacttgt cagcgaaagt tctcccgttc cgaccacctg 1560
aagaccacac ccaggactca tacaggtgaa aagcccttca gctgtcggtg gccaagttgt 1620
cagaaaaagt ttgcccggtc agatgaatta gtccgccatc acaacatgca tcagagaaac 1680
atgaccaaac tccagctggc gctttga 1707

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```

<210> 391
<211> 344
<212> PRT
<213> Homo sapiens

```

```

<400> 391
Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly
      5                      10                      15

Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys
      20                      25                      30

Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val
      35                      40                      45

```

Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser
 50 55 60

Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala
 65 70 75 80

Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu
 85 90 95

Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys
 100 105 110

Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro
 115 120 125

Ala Glu Phe His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala
 130 135 140

Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser
 145 150 155 160

Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly
 165 170 175

Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro
 180 185 190

Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg
 195 200 205

Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly
 210 215 220

His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys
 225 230 235 240

His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr
 245 250 255

Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys
 260 265 270

Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn
 275 280 285

Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met
 290 295 300

Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp
 305 310 315 320

Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr
 325 330 335

His Gly Val Phe Arg Gly Ile Gln
340

<210> 392

<211> 568

<212> PRT

<213> Homo sapiens

<400> 392

Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly
5 10 15

Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys
20 25 30

Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val
35 40 45

Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser
50 55 60

Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala
65 70 75 80

Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu
85 90 95

Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys
100 105 110

Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro
115 120 125

Ala Glu Phe Pro Leu Val Pro Arg Gly Ser Pro Met Gly Ser Asp Val
130 135 140

Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly
145 150 155 160

Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val
165 170 175

Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly
180 185 190

Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His
195 200 205

Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu
210 215 220

Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr

225		230		235		240
Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro						
		245		250		255
Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr						
		260		265		270
Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr						
		275		280		285
Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser						
		290		295		300
His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro						
		305		310		315
Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro						
		325		330		335
Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln						
		340		345		350
Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met						
		355		360		365
Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala						
		370		375		380
Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr						
		385		390		395
Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe						
		405		410		415
Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu						
		420		425		430
Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala						
		435		440		445
Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met						
		450		455		460
His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys						
		465		470		475
Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln						
		485		490		495
Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg						
		500		505		510
Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr						

515		520		525
Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe				
530		535		540
Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn				
545		550		555
				560
Met Thr Lys Leu Gln Leu Ala Leu				
		565		

<210> 393

<211> 420

<212> PRT

<213> Homo sapiens

<400> 393

Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly		
5	10	15
Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys		
20	25	30
Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val		
35	40	45
Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser		
50	55	60
Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala		
65	70	75
Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu		
85	90	95
Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys		
100	105	110
Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro		
115	120	125
Ala Glu Phe Pro Leu Val Pro Arg Gly Ser Pro Met Gly Ser Asp Val		
130	135	140
Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly		
145	150	155
Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val		
165	170	175
Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly		
180	185	190

Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His
 195 200 205
 Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu
 210 215 220
 Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr
 225 230 235 240
 Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro
 245 250 255
 Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr
 260 265 270
 Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr
 275 280 285
 Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser
 290 295 300
 His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro
 305 310 315 320
 Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro
 325 330 335
 Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln
 340 345 350
 Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met
 355 360 365
 Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala
 370 375 380
 Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr
 385 390 395 400
 Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe
 405 410 415
 Arg Gly Ile Gln
 420

<210> 394
 <211> 362
 <212> PRT
 <213> Homo sapiens

<400> 394
 Met His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro
 5 10 15

His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln
 20 25 30
 Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro
 35 40 45
 Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala
 50 55 60
 Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln
 65 70 75 80
 Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr
 85 90 95
 Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu
 100 105 110
 Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val
 115 120 125
 Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly
 130 135 140
 Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr
 145 150 155 160
 Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu
 165 170 175
 Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His
 180 185 190
 Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly
 195 200 205
 Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro
 210 215 220
 Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met
 225 230 235 240
 Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu
 245 250 255
 Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp
 260 265 270
 Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg
 275 280 285
 His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys
 290 295 300

Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr
305 310 315 320

His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys
325 330 335

Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln
340 345 350

Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
355 360

<210> 395

<211> 214

<212> PRT

<213> Homo sapiens

<400> 395

Met His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro
5 10 15

His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln
20 25 30

Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro
35 40 45

Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala
50 55 60

Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln
65 70 75 80

Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr
85 90 95

Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu
100 105 110

Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val
115 120 125

Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly
130 135 140

Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr
145 150 155 160

Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu
165 170 175

Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His

```

          180                      185                      190
Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly
      195                        200                        205
Val Phe Arg Gly Ile Gln
    210

```

```
<210> 396
<211> 30
<212> DNA
<213> Artificial Sequence
```

<220>
<223> PCR primer

<400> 396
gacgaaagca tatgcactcc ttcatcaaac 30

```
<210> 397
<211> 31
<212> DNA
<213> Artificial Sequence
```

<220>
<223> PCR primer

<400> 397
cgcgatgaatt catcactgaa tgccctctgaa g 31

```
<210> 398
<211> 31
<212> DNA
<213> Artificial Sequence
```

<220>
<223> PCR primer

<400> 398
cgataagcat atgacggccg cgtccgataa c 31

```
<210> 399
<211> 31
<212> DNA
<213> Artificial Sequence
```

<220>
<223> PCR primer

<400> 399
cgcggtgaatt catcactgaa tgcctctgaa g 31

<210> 400
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 400
 cgataagcat atgacggccg cgtccgataa c 31

<210> 401
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 401
 gtctgcagcg gccgctcaaa gcgccagc 28

<210> 402
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 402
 gacgaaagca tatgcactcc ttcacaaac 30

<210> 403
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 403
 gtctgcagcg gccgctcaaa gcgccagc 28

<210> 404
 <211> 449
 <212> PRT
 <213> Homo sapiens

<400> 404
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1 5 10 15
 Ser Leu Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala

			20					25					30			
Gln	Trp	Ala	Pro	Val	Leu	Asp	Phe	Ala	Pro	Pro	Gly	Ala	Ser	Ala	Tyr	
		35					40					45				
Gly	Ser	Leu	Gly	Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	Pro	Pro	Pro	Pro	
	50					55					60					
Pro	Pro	Pro	Pro	His	Ser	Phe	Ile	Lys	Gln	Glu	Pro	Ser	Trp	Gly	Gly	
65				70					75					80		
Ala	Glu	Pro	His	Glu	Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val	His	Phe	
			85					90					95			
Ser	Gly	Gln	Phe	Thr	Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly	Pro	Phe	
			100					105					110			
Gly	Pro	Pro	Pro	Pro	Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg	Met	Phe	
		115					120					125				
Pro	Asn	Ala	Pro	Tyr	Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro	Ala	Ile	
	130					135					140					
Arg	Asn	Gln	Gly	Tyr	Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro	Ser	Tyr	
145				150						155					160	
Gly	His	Thr	Pro	Ser	His	His	Ala	Ala	Gln	Phe	Pro	Asn	His	Ser	Phe	
			165						170					175		
Lys	His	Glu	Asp	Pro	Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu	Gln	Gln	
			180					185					190			
Tyr	Ser	Val	Pro	Pro	Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr	Asp	Ser	
		195					200					205				
Cys	Thr	Gly	Ser	Gln	Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser	Ser	Asp	
	210					215					220					
Asn	Leu	Tyr	Gln	Met	Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp	Asn	Gln	
225				230						235					240	
Met	Asn	Leu	Gly	Ala	Thr	Leu	Lys	Gly	Val	Ala	Ala	Gly	Ser	Ser	Ser	
			245						250				255			
Ser	Val	Lys	Trp	Thr	Glu	Gly	Gln	Ser	Asn	His	Ser	Thr	Gly	Tyr	Glu	
			260					265					270			
Ser	Asp	Asn	His	Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	
		275					280					285				
His	Thr	His	Gly	Val	Phe	Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val	Pro	
	290					295					300					
Gly	Val	Ala	Pro	Thr	Leu	Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu	Lys	
305					310					315					320	
Arg	Pro	Phe	Met	Cys	Ala	Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe	Lys	
			325						330					335		
Leu	Ser	His	Leu	Gln	Met	His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys	Pro	
			340					345					350			
Tyr	Gln	Cys														

<210> 405
 <211> 428
 <212> FRT
 <213> Homo sapiens

<400> 405

Met	Gly	Ser	Asp	Val	Arg	Asp	Leu	Asn	Ala	Leu	Leu	Pro	Ala	Val	Pro
1				5					10					15	
Ser	Pro	Gly	Gly	Gly	Gly	Gly	Cys	Ala	Leu	Pro	Val	Ser	Gly	Ala	Thr
		20						25					30		
Gln	Trp	Ala	Pro	Val	Leu	Asp	Phe	Val	Pro	Pro	Gly	Ala	Pro	Val	Cys
	35						40					45			
Gly	Ser	Leu	Gly	Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	Pro	Pro	Leu	Pro
	50					55					60				
Pro	Pro	Pro	Ser	His	Ser	Phe	Thr	Lys	Gln	Glu	Pro	Ser	Trp	Gly	Gly
65				70						75					80
Thr	Glu	Pro	His	Ala	Gly	Gln	Gly	Arg	Ser	Ala	Leu	Val	Ala	His	Ser
			85					90						95	
Ser	Gly	Gln	Phe	Thr	Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly	Pro	Phe
			100					105					110		
Gly	Pro	Pro	Pro	Pro	Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg	Met	Phe
	115						120					125			
Pro	Asn	Ala	Pro	Tyr	Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro	Ala	Ile
	130					135					140				
Arg	Asn	Gln	Gly	Tyr	Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro	Ser	Tyr
145					150					155					160
Gly	His	Thr	Pro	Ser	His	His	Ala	Ala	Gln	Phe	Pro	Asn	His	Ser	Ser
			165						170					175	
Lys	His	Glu	Asp	Pro	Met	Gly	Gln	Gln	Gly	Ser	Pro	Gly	Glu	Gln	Gln
		180						185					190		
Tyr	Ser	Ala	Pro	Pro	Pro	Val	Cys	Gly	Cys	Arg	Thr	Pro	Thr	Gly	Ser
	195						200					205			
Cys	Thr	Gly	Ser	Gln	Ala	Leu	Leu	Leu	Arg	Ala	Pro	Tyr	Ser	Gly	Gly
	210					215					220				
Asp	Leu	His	Gln	Thr	Thr	Ser	Gln	Leu	Gly	His	Met	Ala	Trp	Asn	Gln
225				230						235					240
Thr	Asn	Leu	Gly	Ala	Thr	Leu	Lys	Gly	His	Gly	Thr	Gly	Tyr	Glu	Ser
			245						250					255	
Asp	Asp	His	Thr	Thr	Pro	Ile	Leu	Cys	Gly	Thr	Gln	Tyr	Arg	Ile	Arg
		260						265					270		
Ala	Arg	Gly	Val	Leu	Arg	Gly	Thr	Gln	Asp	Val	Arg	Cys	Val	Pro	Gly
	275						280					285			
Val	Ala	Pro	Thr	Leu	Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu	Lys	Arg
	290					295					300				
Pro	Leu	Met	Cys	Ala	Tyr	Pro	Gly	Cys	Asn	Lys	Arg	His	Phe	Lys	Pro
305					310					315					320
Ser	Arg	Leu	Arg	Val	Arg	Gly	Arg	Glu	Arg	Thr	Gly	Glu	Lys	Pro	Tyr
			325						330					335	
Gln	Arg	Asp	Phe	Lys	Asp	Arg	Gly	Arg	Gly	Leu	Leu	Arg	Pro	Asp	Gln
		340						345					350		
Leu	Lys	Arg	His	Gln	Arg	Gly	His	Thr	Gly	Val	Lys	Pro	Leu	Gln	Cys

		355					360					365				
Glu	Ala	Arg	Arg	Arg	Pro	Pro	Arg	Pro	Gly	His	Leu	Lys	Val	His	Thr	
	370						375					380				
Arg	Thr	His	Thr	Gly	Gly	Glu	Pro	Phe	Ser	Cys	Arg	Trp	Pro	Ser	Cys	
385						390				395					400	
Gln	Glu	Lys	Ser	Ala	Arg	Pro	Asp	Glu	Ser	Ala	Arg	Arg	His	Asn	Met	
				405					410					415		
His	Gln	Arg	Asn	Met	Thr	Lys	Leu	Gln	Leu	Ala	Leu					
			420					425								

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<210> 406
<211> 414
<212> PRT
<213> Homo sapiens
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<220>  
<221> VARIANT  
<222> 85, 86, 172, 173, 242, 245, 246, 247  
<223> Xaa = Any Amino Acid
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<400> 406															
Met 1	Gly	Ser	Asp	Val 5	Arg	Asp	Leu	Ser	Ala 10	Leu	Leu	Pro	Ala	Val 15	Pro
Ser	Leu	Gly	Asp 20	Gly	Gly	Gly	Cys 25	Ala	Leu	Pro	Val	Ser	Gly 30	Ala	Ala
Gln	Trp	Ala 35	Pro	Val	Leu	Asp 40	Phe	Ala	Pro	Pro	Gly	Ala 45	Ser	Ala	His
Gly	Pro 50	Leu	Gly	Gly	Pro	Ala 55	Pro	Pro	Ser	Ala 60	Pro	Pro	Pro	Pro	Pro
Pro 65	Pro	Pro	Pro	His	Ser 70	Phe	Ile	Lys	Gln	Gly 75	Pro	Ser	Trp	Gly	Gly 80
Ala	Glu	Leu	His 85	Xaa	Xaa	Gln	Tyr	Leu	Ser 90	Ala	Phe	Thr	Val	His 95	Ser
Ser	Gly	Gln	Val 100	His	Trp	His	Gly	Arg 105	Gly	Leu	Ser	Leu	Arg 110	Ala	Pro
Arg	Pro	Pro 115	Ser	Ala	Gln	Pro	Gly 120	Val	Ile	Arg	Pro	Gly 125	Gln	Asp	Val
Ser	Arg 130	Ala	Leu	Pro	Ala	Gln 135	Pro	Pro	Arg	Glu	Pro 140	Ala	Arg	Tyr	Pro
Gln 145	Ser	Gly	Leu	Gln	His 150	Gly	His	Leu	Arg	Arg 155	Gly	Val	Arg	Leu	Arg 160
Ser	His	Ala	Leu	Ala 165	Pro	Cys	Gly	Ala	Val 170	Leu	Xaa	Xaa	Thr	Arg 175	Ala
Gly	Ser	His 180	Gly	Pro	Ala	Gly	Ser 185	Ala	Gly	Ala	Ala	Val	Leu 190	Gly	Ala
Ala	Pro	Gly 195	Leu	Trp	Pro	Pro	His 200	Pro	Arg	Arg	Gln	Leu 205	Arg	Arg	Gln
Pro	Gly 210	Phe	Ala	Ala	Glu	Gly 215	Ala	Leu	Gln	Arg	Arg 220	Phe	Ile	Pro	Ser
Asp 225	Val	Pro	Ala	Val	His 230	Gly	Leu	Glu	Ser	Asp 235	Glu	Pro	Arg	Gly	Arg 240
Leu	Xaa	Gly	Pro	Xaa 245	Xaa	Xaa	Val	Arg	Glu 250	Arg	Ser	His	Asn	Ala 255	Arg

```

Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Gly
      260                      265                      270
Arg Ser Gly Cys Ala Pro Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr
      275                      280                      285
Val Gly Ile Gly Gln Gly Thr Pro Pro His Val Cys Leu Pro Arg Leu
      290                      295                      300
Gln Glu Val Ser Glu Ala Ala Pro Leu Thr Asp Ala Arg Glu Ala Arg
      305                      310                      315                      320
Trp Glu Thr Ile Pro Val Leu Gln Gly Leu Trp Thr Glu Val Phe Leu
      325                      330                      335
Leu Arg Pro Ala Gln Lys Thr Pro Gly Glu Ala Tyr Arg Cys Glu Ala
      340                      345                      350
Ile Pro Ala Asp Leu Ser Ala Arg Val Leu Pro Ala Gln Pro Pro Glu
      355                      360                      365
Asp Pro Arg Gln Asp Ser Cys Arg Lys Ala Pro Gln Leu Ser Val Val
      370                      375                      380
Arg Leu Ser Glu Lys Ala Cys Pro Val Lys Val Gly Pro Pro Ser Arg
      385                      390                      395                      400
His Ala Ser Glu Gly His Asp Arg Thr Pro Ala Gly Ala Leu
      405                      410

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<210> 407

<211> 417

<212> PRT

<213> Homo sapiens

<400> 407

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Met Gly Ser Asp Val Arg Asp Leu Ser Ala Leu Leu Pro Thr Ala Pro
1      5      10      15
Ser Leu Gly Gly Gly Asp Cys Thr Leu Pro Val Ser Gly Thr Ala
      20      25      30
Gln Trp Ala Pro Val Pro Ala Ser Ala Pro Pro Gly Ala Ser Ala Tyr
      35      40      45
Asp Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
      50      55      60
Pro Pro Pro Pro His Ser Cys Gly Glu Gln Gly Pro Ser Trp Gly Gly
      65      70      75      80
Ala Glu Pro Arg Glu Gly Gln Cys Leu Ser Ala Pro Ala Val Arg Phe
      85      90      95
Ser Gly Arg Phe Thr Gly Thr Val Gly Ala Cys Arg Tyr Gly Pro Leu
      100     105     110
Gly Pro Pro Pro Ser Gln Ala Pro Ser Gly Gln Thr Arg Met Leu
      115     120     125
Pro Ser Ala Pro Tyr Leu Ser Ser Cys Leu Arg Ser Arg Ser Ala Ile
      130     135     140
Arg Ser Gln Gly Arg Ser Thr Ala Pro Ser Ala Gly Arg Pro Ala Met
      145     150     155     160
Ala Pro Thr Leu Ala Pro Pro Ala Gln Ser His Tyr Ser Gln His Gly
      165     170     175
Val Leu His Gly Pro Ala Gly Leu Ala Gly Ala Ala Val Leu Gly Ala
      180     185     190
Ala Pro Gly Leu Trp Leu Pro His Pro His Arg Gln Leu His Arg Gln
      195     200     205

```

```

Pro Gly Phe Ala Ala Glu Asp Ala Leu Gln Gln Gln Phe Ile Pro Asn
  210          215          220
Asp Ile Pro Ala Met His Asp Leu Glu Ser Asp Glu Leu Arg Ser His
225          230          235          240
Leu Lys Gly Pro Gln His Arg Val Arg Glu Arg Pro His Asn Ala His
          245          250          255
Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Arg
          260          265          270
His Ser Gly Cys Ala Thr Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr
          275          280          285
Val Ala Pro Glu Thr Ser Glu Asn Ala Pro Trp Cys Val Leu Pro Gly
290          295          300
Leu Gln Gly Val Phe Ala Val Pro Leu Thr Gly Ala Gln Gln Glu Ala
305          310          315          320
His Trp Asp Ala Thr Pro Val Arg Leu Gln Gly Pro Trp Thr Arg Ala
          325          330          335
Ser Pro Phe Gly Thr Ser Pro Arg Asp Thr Lys Gly Asp Ile Gln Val
          340          345          350
Arg Asn His Ser Ser Val Arg Leu Val Ser Glu Gly Ser Pro Gly Pro
          355          360          365
Thr Thr Gly Pro Thr Pro Gly Pro Thr Arg Val Gly Ser Pro Ser Ala
          370          375          380
Ala Gly Gly Gln Ala Ala Arg Glu Gly Ser Pro Ser Gln Thr Asn Ser
385          390          395          400
Val Ile Thr Thr Cys Ile Ser Glu Thr Leu Asn Ser Ser Trp Arg Phe
          405          410          415
Glu

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<210> 408
<211> 429
<212> PRT
<213> Homo sapiens

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<400> 408
Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
  1          5          10          15
Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
          20          25          30
Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
          35          40          45
Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
50          55          60
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
65          70          75          80
Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
          85          90          95
Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
          100          105          110
Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
          115          120          125
Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
130          135          140

```

```

Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
145                      150                      155                      160
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
                      165                      170                      175
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
                      180                      185                      190
Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
                      195                      200                      205
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
                      210                      215                      220
Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
225                      230                      235                      240
Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser
                      245                      250                      255
Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His
                      260                      265                      270
Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly
                      275                      280                      285
Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg
                      290                      295                      300
Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu
305                      310                      315                      320
Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr
                      325                      330                      335
Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln
                      340                      345                      350
Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys
                      355                      360                      365
Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His
                      370                      375                      380
Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser
385                      390                      395                      400
Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn
                      405                      410                      415
Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
                      420                      425

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<210> 409

<211> 495

<212> PRT

<213> Homo sapiens

<400> 409

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Met Ala Ala Pro Gly Ala Arg Arg Ser Leu Leu Leu Leu Leu Ala
1      5      10      15
Gly Leu Ala His Gly Ala Ser Ala Leu Phe Glu Asp Leu Met Gly Ser
20     25     30
Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly
35     40     45
Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala
50     55     60
Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu
65     70     75     80

```

Gly	Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	Pro	Pro	Pro	Pro	Pro	Pro	His
			85						90					95	
Ser	Phe	Ile	Lys	Gln	Glu	Pro	Ser	Trp	Gly	Gly	Ala	Glu	Pro	His	Glu
			100					105					110		
Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val	His	Phe	Ser	Gly	Gln	Phe	Thr
		115					120					125			
Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly	Pro	Phe	Gly	Pro	Pro	Pro	Pro
		130				135					140				
Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg	Met	Phe	Pro	Asn	Ala	Pro	Tyr
145					150					155				160	
Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro	Ala	Ile	Arg	Asn	Gln	Gly	Tyr
			165					170						175	
Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro	Ser	Tyr	Gly	His	Thr	Pro	Ser
		180						185					190		
His	His	Ala	Gln	Phe	Pro	Asn	His	Ser	Phe	Lys	His	Glu	Asp	Pro	
		195				200					205				
Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu	Gln	Gln	Tyr	Ser	Val	Pro	Pro
210						215					220				
Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr	Asp	Ser	Cys	Thr	Gly	Ser	Gln
225					230					235					240
Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser	Ser	Asp	Asn	Leu	Tyr	Gln	Met
				245				250						255	
Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp	Asn	Gln	Met	Asn	Leu	Gly	Ala
			260					265					270		
Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr	Glu	Ser	Asp	Asn	His	Thr	Thr
		275					280					285			
Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	His	Thr	His	Gly	Val	Phe
		290				295					300				
Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val	Pro	Gly	Val	Ala	Pro	Thr	Leu
305					310					315					320
Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu	Lys	Arg	Pro	Phe	Met	Cys	Ala
			325						330					335	
Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe	Lys	Leu	Ser	His	Leu	Gln	Met
			340					345					350		
His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys	Pro	Tyr	Gln	Cys	Asp	Phe	Lys
		355					360					365			
Asp	Cys	Glu	Arg	Arg	Phe	Phe	Arg	Ser	Asp	Gln	Leu	Lys	Arg	His	Gln
370						375					380				
Arg	Arg	His	Thr	Gly	Val	Lys	Pro	Phe	Gln	Cys	Lys	Thr	Cys	Gln	Arg
385					390					395					400
Lys	Phe	Ser	Arg	Ser	Asp	His	Leu	Lys	Thr	His	Thr	Arg	Thr	His	Thr
			405						410					415	
Gly	Glu	Lys	Pro	Phe	Ser	Cys	Arg	Trp	Pro	Ser	Cys	Gln	Lys	Lys	Phe
			420					425					430		
Ala	Arg	Ser	Asp	Glu	Leu	Val	Arg	His	His	Asn	Met	His	Gln	Arg	Asn
			435				440					445			
Met	Thr	Lys	Leu	Gln	Leu	Ala	Leu	Leu	Asn	Asn	Met	Leu	Ile	Pro	Ile
			450			455					460				
Ala	Val	Gly	Gly	Ala	Leu	Ala	Gly	Leu	Val	Leu	Ile	Val	Leu	Ile	Ala
465					470					475					480
Tyr	Leu	Ile	Gly	Arg	Lys	Arg	Ser	His	Ala	Gly	Tyr	Gln	Thr	Ile	
			485						490					495	

<210> 410
 <211> 504
 <212> PRT
 <213> Homo sapiens

<400> 410

Met	Gln	Ile	Phe	Val	Lys	Thr	Leu	Thr	Gly	Lys	Thr	Ile	Thr	Leu	Glu
1				5					10					15	
Val	Glu	Pro	Ser	Asp	Thr	Ile	Glu	Asn	Val	Lys	Ala	Lys	Ile	Gln	Asp
			20					25					30		
Lys	Glu	Gly	Ile	Pro	Pro	Asp	Gln	Gln	Arg	Leu	Ile	Phe	Ala	Gly	Lys
		35					40					45			
Gln	Leu	Glu	Asp	Gly	Arg	Thr	Leu	Ser	Asp	Tyr	Asn	Ile	Gln	Lys	Glu
	50					55				60					
Ser	Thr	Leu	His	Leu	Val	Leu	Arg	Leu	Arg	Gly	Ala	Met	Gly	Ser	Asp
65					70					75				80	
Val	Arg	Asp	Leu	Asn	Ala	Leu	Leu	Pro	Ala	Val	Pro	Ser	Leu	Gly	Gly
				85					90					95	
Gly	Gly	Gly	Cys	Ala	Leu	Pro	Val	Ser	Gly	Ala	Ala	Gln	Trp	Ala	Pro
			100					105					110		
Val	Leu	Asp	Phe	Ala	Pro	Pro	Gly	Ala	Ser	Ala	Tyr	Gly	Ser	Leu	Gly
		115					120					125			
Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	His
	130					135					140				
Ser	Phe	Ile	Lys	Gln	Glu	Pro	Ser	Trp	Gly	Gly	Ala	Glu	Pro	His	Glu
145					150					155				160	
Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val	His	Phe	Ser	Gly	Gln	Phe	Thr
				165					170					175	
Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly	Pro	Phe	Gly	Pro	Pro	Pro	Pro
			180					185					190		
Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg	Met	Phe	Pro	Asn	Ala	Pro	Tyr
		195					200					205			
Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro	Ala	Ile	Arg	Asn	Gln	Gly	Tyr
	210					215					220				
Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro	Ser	Tyr	Gly	His	Thr	Pro	Ser
225					230					235				240	
His	His	Ala	Ala	Gln	Phe	Pro	Asn	His	Ser	Phe	Lys	His	Glu	Asp	Pro
				245					250					255	
Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu	Gln	Gln	Tyr	Ser	Val	Pro	Pro
			260					265					270		
Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr	Asp	Ser	Cys	Thr	Gly	Ser	Gln
		275					280						285		
Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser	Ser	Asp	Asn	Leu	Tyr	Gln	Met
	290					295					300				
Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp	Asn	Gln	Met	Asn	Leu	Gly	Ala
305					310					315				320	
Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr	Glu	Ser	Asp	Asn	His	Thr	Thr
				325					330					335	
Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	His	Thr	His	Gly	Val	Phe
			340					345					350		
Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val	Pro	Gly	Val	Ala	Pro	Thr	Leu
		355					360					365			
Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu	Lys	Arg	Pro	Phe	Met	Cys	Ala
	370					375					380				

Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met
 385 390 395 400
 His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys
 405 410 415
 Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln
 420 425 430
 Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
 435 440 445
 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
 450 455 460
 Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe
 465 470 475 480
 Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn
 485 490 495
 Met Thr Lys Leu Gln Leu Ala Leu
 500

<210> 411
 <211> 10
 <212> PRT
 <213> Homo sapiens

<400> 411
 Val Leu Asp Phe Ala Pro Pro Gly Ala Ser
 1 5 10

<210> 412
 <211> 15
 <212> PRT
 <213> Homo sapiens

<400> 412
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala
 1 5 10 15

<210> 413
 <211> 15
 <212> PRT
 <213> Homo sapiens

<400> 413
 Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu
 1 5 10 15

<210> 414
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 414

Ile Leu Asp Phe Ala Pro Pro Gly Ala
1 5

<210> 415

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 415

Leu Leu Asp Phe Ala Pro Pro Gly Ala
1 5

<210> 416

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

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<400> 416

Phe Leu Asp Phe Ala Pro Pro Gly Ala
1 5

<210> 417

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

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<400> 417

Lys Leu Asp Phe Ala Pro Pro Gly Ala
1 5

<210> 418

<211> 9

<212> PRT

<213> Artificial Sequence

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Met Leu Asp Phe Ala Pro Pro Gly Ala
1 5

<210> 419

<211> 9

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<400> 419

Tyr Leu Asp Phe Ala Pro Pro Gly Ala
1 5

<210> 420

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

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<400> 420

Val Met Asp Phe Ala Pro Pro Gly Ala
1 5

<210> 421

<211> 9

<212> PRT

<213> Artificial Sequence

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<400> 421

Val Leu Asp Glu Ala Pro Pro Gly Ala
1 5

<210> 422

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 422

Val Leu Asp Lys Ala Pro Pro Gly Ala

1

5

<210> 423

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 423

Val Leu Asp Phe Ala Val Pro Gly Ala

1

5

<210> 424

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 424

Val Leu Asp Phe Ala Pro Pro Lys Ala

1

5

<210> 425

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 425

Val Leu Asp Phe Ala Pro Pro Gly Val

1

5

<210> 426

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 426

Val Leu Asp Phe Ala Pro Pro Gly Leu

1

5

<210> 427
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<400> 427
Phe Leu Asp Glu Ala Pro Pro Gly Ala
1 5

<210> 428
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<400> 428
Lys Leu Asp Glu Ala Pro Pro Gly Ala
1 5

<210> 429
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 429
Tyr Leu Asp Glu Ala Pro Pro Gly Ala
1 5

<210> 430
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<400> 430
Phe Leu Asp Lys Ala Pro Pro Gly Ala
1 5

<210> 431

<211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 431
 Lys Leu Asp Lys Ala Pro Pro Gly Ala
 1 5

<210> 432
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 432
 Tyr Leu Asp Lys Ala Pro Pro Gly Ala
 1 5

<210> 433
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 433
 Phe Leu Asp Phe Ala Pro Pro Gly Val
 1 5

<210> 434
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 434
 Lys Leu Asp Phe Ala Pro Pro Gly Val
 1 5

<210> 435
 <211> 9
 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 435

Tyr Leu Asp Phe Ala Pro Pro Gly Val
1 5

<210> 436

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 436

Phe Leu Asp Phe Ala Pro Pro Gly Leu
1 5

<210> 437

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 437

Lys Leu Asp Phe Ala Pro Pro Gly Leu
1 5

<210> 438

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 438

Tyr Leu Asp Phe Ala Pro Pro Gly Leu
1 5

<210> 439

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 439

Phe Leu Asp Glu Ala Pro Pro Gly Val
1 5

<210> 440

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 440

Lys Leu Asp Glu Ala Pro Pro Gly Val
1 5

<210> 441

<211> 9

<212> PRT

<213> Artificial Sequence

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<223> Synthetic peptide

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<210> 442

<211> 9

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<223> Synthetic peptide

<400> 442

Phe Leu Asp Glu Ala Pro Pro Gly Leu
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<212> PRT

<213> Artificial Sequence

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<400> 443

Lys Leu Asp Glu Ala Pro Pro Gly Leu
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<210> 444

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 444

Tyr Leu Asp Glu Ala Pro Pro Gly Leu
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<210> 445

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 445

Val Leu Asp Phe Ala Gly Pro Gly Ala
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<210> 446

<211> 9

<212> PRT

<213> Artificial Sequence

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<223> Synthetic peptide

<400> 446

Val Leu Asp Phe Ala Thr Pro Gly Ala
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<210> 447

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 447

Val Leu Asp Phe Ala Thr Pro Gly Val
1 5

<210> 448
<211> 9
<212> PRT
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<220>
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<400> 448
Val Leu Asp Phe Ala Thr Pro Gly Leu
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<210> 449
<211> 9
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<220>
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Val Leu Asp Phe Ala Thr Pro Gly Ser
1 5

<210> 450
<211> 9
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<220>
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<400> 450
Val Leu Asp Phe Ala Thr Pro Gly Ala
1 5

<210> 451
<211> 9
<212> PRT
<213> Homo sapiens

<400> 451
Ala Leu Leu Pro Ala Val Pro Ser Leu
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<210> 452
<211> 969

<212> DNA
 <213> Homo sapiens

<400> 452

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<210> 453
 <211> 1410
 <212> DNA
 <213> Homo sapiens

<400> 453

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<210> 454

<211> 469

<212> PRT

<213> Homo sapiens

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Gln Leu Gly Gly Leu Thr Val Ala Gly Met Leu Gly Pro Ser Leu Leu
 20 25 30

Thr Pro Arg Arg Ala Thr Ala Ala His Gly Ser Asp Val Arg Asp Leu
 35 40 45

Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Gly Cys
 50 55 60

Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe
 65 70 75 80

Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro
 85 90 95

Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile
 100 105 110

Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys
 115 120 125

Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala
 130 135 140

Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala
 145 150 155 160

Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser
 165 170 175

Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val
 180 185 190

Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala
 195 200 205

Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln
 210 215 220

Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr
 225 230 235 240

Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu
 245 250 255

Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln

260 265 270
 Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys
 275 280 285
 Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu
 290 295 300
 Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile
 305 310 315 320
 Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser
 325 330 335
 Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly
 340 345 350
 Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg
 355 360 365
 Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu
 370 375 380
 Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg His
 385 390 395 400
 Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser
 405 410 415
 Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys
 420 425 430
 Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser
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 Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn Met Thr Lys
 450 455 460
 Leu Gln Leu Ala Leu
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<210> 455

<211> 321

<212> PRT

<213> Homo sapiens

<400> 455

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Gln Leu Gly Gly Leu Thr Val Ala Gly Met Leu Gly Pro Ser Leu Leu
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Thr Pro Arg Arg Ala Thr Ala Ala His Gly Ser Asp Val Arg Asp Leu
 35 40 45
 Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Cys
 50 55 60
 Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe
 65 70 75 80
 Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro
 85 90 95
 Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile
 100 105 110
 Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys
 115 120 125
 Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala
 130 135 140
 Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala
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 Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser
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 Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val
 180 185 190
 Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala
 195 200 205
 Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln
 210 215 220
 Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr
 225 230 235 240
 Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu
 245 250 255
 Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln
 260 265 270
 Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys
 275 280 285
 Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu
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 Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile
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<210> 456
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

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<210> 457
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 <212> DNA
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<220>
 <223> PCR primer

<400> 457
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<210> 458
 <211> 21
 <212> DNA
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<220>
 <223> PCR primer

<400> 458
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<210> 459
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<400> 459
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<210> 460
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aacttaggag ccaccttaaa gggccacagc acagggtacg agagcgataa ccacacaacg 780
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<210> 461

<211> 280

<212> PRT

<213> Homo sapiens

<400> 461

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Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly
35      40      45
Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro
50      55      60
Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala
65      70      75      80
Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser
85      90      95
Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly
100     105     110
Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro
115     120     125
Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg
130     135     140
Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly
145     150     155     160
His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys
165     170     175
His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr
180     185     190
Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys
195     200     205
Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn
210     215     220
Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met
225     230     235     240
Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp

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